#### REMARKS

Claims 1, 3-13 are presently in the subject application.

Claims 1, and 3-13 have been amended to more fully define and more adequately protect Applicants' invention. The amendments do not add new matter nor raise an additional issue and, accordingly, entry of these amendments is respectfully requested.

Claim 2 has been cancelled without prejudice.

Claims 3-11 and 13 are objected to under 37 C.F.R. 1.75(e) because multiple dependent claims cannot depend from any other multiple dependent claim. These claims have been amended whereby the multiple dependency has been deleted. Accordingly, amended claims 3-11 and 13 are not subject to an objection and allowance of these claims is respectfully requested.

Claim 12 is rejected under 35 U.S.C. § 112, second paragraph, as (a) being dependent from claim 1, (b) formula (XXI) in the claim differs from the formula (XXI) in the subject specification at page 52, (c) the rings W<sup>1</sup> and W<sup>2</sup> are not part of the formula (XXI) and (d) the chemical structure of the formulae (XXIII) and (XXIV) are identical. Claim 12 has been amended whereby (1) it is not dependent from claim 1, (2) formulae (XXI) and (XXII) have been deleted, and (3) formule (XXIII) and (XXIV) are not identical since the position of "N" in the first ring is different. Accordingly, amended claim 12 is not subject to a rejection under 35 U.S.C. § 112, second paragraph, and allowance of this claim is respectfully requested.

Claims 1 and 12 are rejected under 35 U.S.C. § 102(e) as anticipated by Schmidt et al., U.S. Patent No. 6,368,679 ("SCHMIDT"). Additionally, it is to be pointed out that the Examiner has stated that claim 2 "is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form ...", claim 1 has been amended to incorporate

original claim 2 with all of its limitations. Therefore, amended claim 1 is not anticipated under 35 U.S.C. § 102(e) by SCHMIDT and allowance of amended claim 1 is respectfully requested.

Claim 12 has been amended to define a compound which differs from SCHMIDT.

SCHMIDT relates to FLC mixtures and not to individual compounds. Accordingly, claim 12 is not anticipated, under 35 U.S.C. § 102(e), by SCHMIDT. Allowance of claim 12 is respectfully requested.

Claims 1 and 12 are rejected under the judicially created doctrine of obviousness-type double patenting over claims 1-3 of SCHMIDT, claims 6-7 of U.S. Patent No. 6,465,060 and claims 1-6, of U.S. Patent No. 6,482,479. It is respectfully submitted that claims 1 and 12 of the subject application are patentably, distinct over the claims of these references.

The deficiencies of SCHMIDT with respect to amended claim 1, discussed above, are reiterated hereat.

Both SCHMIDT and U.S. Patent No. 6.482,479 relate to FLC mixtures and not to individual compounds as defined in claim 12. U.S. Patent No. 6.465,060 relates to tetrahydrothiophene derivatives which are not claimed by Applicants.

It is submitted that claims 1 and 12 are not subject to the asserted obviousness-type double patenting rejection and allowance of claims 1 and 12 is respectfully requested.

The Examiner is hereby authorized to call the undersigned attorney on record "collect" on any matter connected with this application. The telephone number is 212-588-0800. In the absence of the undersigned attorney of record, the call will be accepted by any attorney empowered in this application.

514453-3879 PATENT

We all

Respectfully submitted,

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212-588-0800

# VERSION WITH MARKINGS TO SHOW THE CHANGES MADE

Claim I has been amended as follows:

I (Amended). An active-matrix display containing a <u>ferro</u>electic [chiral smeetic] (<u>chiral smeetic</u>) liquidcrystal mixture, wherein the liquid-crystal mixture [comprises] <u>comprising</u> at least one compound of the formula (1)

$$R^{1}-(A^{1}-M^{1})_{a}-(A^{2}-M^{2})_{b}-A^{3}-X-B^{1}-(B^{2})_{c}-R^{2}$$
 (I)

where the symbols are as defined below:

 $\mbox{\bf R}^{1},\mbox{\bf R}^{2}$  are, independently of one another, identical or different and are each

- a) hydrogen, fluorine or CN
  - a straight-chain or branched alkenyl, alkenyloxy, alkyl or alkyloxy radical (with or without asymmetric carbon atoms) having 2 to 16 carbon atoms, where
  - b1) one or two nonterminal -CH<sub>2</sub>- groups may be replaced by -O-, -OC(=O)-, -(C=O), -C(=O)O-, -Si(CH<sub>Q</sub>)<sub>Z</sub>-, -CH(Cl)- and/or one or two -CH<sub>2</sub>- groups may be replaced by -CH=CH- or -C=C-

and one or more H atoms may be replaced by F and/or

b2) one or more -CH<sub>2</sub>- groups may be replaced by phenylene-1,4-diyl (unsubstituted, monosubstituted or disubstituted by F), phenylene-1,3-diyl (unsubstituted, monosubstituted or disubstituted by F), cyclohexane-1,4-diyl (unsubstituted or monosubstituted by F or CN) or cyclopropane-1,2-diyl

and one or more H atoms may be replaced by F with the provisos that only one of the radicals  $R^1$ ,  $R^2$  can be hydrogen, F or CN and that two adjacent -CH<sub>2</sub>- groups cannot be replaced by -O-

 $\text{M}^1, \, \text{M}^2$  are, independently of one another, identical or different and are each

-C(=0)0·, -OC(=0)·, -CH<sub>2</sub>O·, -OCH<sub>2</sub>·, -CF<sub>2</sub>O·, -OCF<sub>2</sub>·, -CF<sub>2</sub>O·, -OCF<sub>2</sub>·, -CH<sub>2</sub>CH<sub>2</sub>·, -CF<sub>2</sub>CF<sub>2</sub>·, -CH<sub>2</sub>CH<sub>4</sub>·, -CH<sub>2</sub>CF<sub>3</sub>·, -CH<sub>2</sub>CH<sub>2</sub>C·, -CH<sub>2</sub>CH<sub>2</sub>C·, -CH<sub>2</sub>CH<sub>2</sub>C·, -CH<sub>2</sub>CH<sub>2</sub>C·, -CH<sub>2</sub>CH<sub>2</sub>C·, -CH<sub>2</sub>CH<sub>2</sub>C·, -OCH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>·, -CH<sub>2</sub>CH<sub>2</sub>C·, -OCH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -OCH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CF<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>CH<sub>2</sub>O·, -CH<sub>2</sub>O·, -CH<sub>2</sub>

A1. A2. A3 are, independently of one another, identical or different and are each cyclohexane-1.4-divl (unsubstituted or monosubstituted by F, CH3, CN), cyclohex-1-ene-1.4-divl. cyclohex-2-ene-1.4-diyl, 2-oxocyclohexane-1.4-diyl, 2-cyclohexen-1-one-3,6-divl. 1-alkvl-1-silacyclohexane-1,4-divl. bicyclo-[2.2.2]octane-1,4-diyl, spiro[4.5]decane-2.8-diyl, spiro[5.5]undecane-3.9-divl. phenylene-1.4-divl (unsubstituted monosubstituted or disubstituted by CN, CH3, CF3, OCH3, unsubstituted, monosubstituted, disubstituted, trisubstituted or tetrasubstituted by F), phenylene-1,3-diyl (unsubstituted, monosubstituted or disubstituted by CN, CH3, CF3, OCF3, unsubstituted, monosubstituted, disubstituted, trisubstituted or tetrasubstituted by F), thiophene-2.5-divl. thiophene-2.4-divl. (1,3,4)-oxadiazole-2,5-diyl, (1.3.4)-thiadiazole-2.5-divl. 1.3-thiazole-2,4-diyl, 1.3-thiazole-2.5-divl. (1.3)-oxazole-2,5-diyl, isoxazole-2,5-diyl, indane-2,6-diyl, naphthalene-2,6-diyl (unsubstituted, monosubstituted or disubstituted by F or CN). 1.2.3,4-tetrahydronaphthalene-2,6-divl. decaline-2,6-diyl, pyrimidine-2,5-diyl (unsubstituted or monosubstituted by F), pyridine-2,5-diyl (unsubstituted, monosubstituted or disubstituted by F), pyrazine-2,5-diyl (unsubstituted or monosubstituted by F), pyridazine-3,6-diyl, quinoline-2,6-diyl, quinoline-3.7-divl. isoquinoline-3.7-divl. quinazoline-2.6-divl. 5,6,7,8-tetrahydroquinazoline-2,6-diyl, quinoxaline-2,6-diyl, 1,3-dioxane-2,5-divl (unsubstituted or monosubstituted by CN), benzothiazole-2,6-divl, piperidine-2,4 divl, piperazine-1.4-divl

B<sup>1</sup> is cyclohexane-1,4-diyl (unsubstituted, monosubstituted or disubstituted by F, CH<sub>3</sub>, CN), perfluorocyclohexane-1,4 diyl, cyclohex-1-ene-1,4-diyl, cyclohex-2-ene-1,4-diyl, 1-alkyl-1-sila

cyclohexane-1,4-divl. bicyclo[2,2,2]octane-1,4-divl. cyclopentane-1,3-diyl, cycloheptane-1,4-diyl, tetrahydrofuran-2.5-divl. tetrahydrofuran-2.4-divl. phenylene-1.4-divl (unsubstituted, monosubstituted or disubstituted by CN, CH3, CF3, OCF3, unsubstituted, monosubstituted, disubstituted, trisubstituted or tetrasubstituted by F), phenylene-1;3-divl (unsubstituted, monosubstituted or disubstituted by CN, CH3, CF3, OCF3, unsubstituted, monosubstituted, disubstituted or trisubstituted by F), thiophene-2.5-diyl (unsubstituted or monosubstituted by F), thiophene-2.4-div (unsubstituted or monosubstituted by F), 1,3-thiazol-2,5-divl (unsubstituted or monosubstituted by F), 1,3-thiazol-2,4-divl (unsubstituted or monosubstituted by F), (1.3.4)-thiadiazol-2.5-divl, 1.3-dioxane-2.5-divl (unsubstituted or monosubstituted by CN), tetrahydropyran-2.5-diyl. 6.6-difluorotetrahydro ovran-2.5- "divf. 6.6-difluoro-2.3-dihydro-6H-pyran-2.5-divl. 6-fluoro-3,4-dihydro-2H-pyran-2,5-diyl, piperidine-1,4-diyl, piperazine-1.4-divl. pyrimidine-2.5-divl (unsubstituted or monosubstituted by F), pyridine-2,5-diyl (unsubstituted or monosubstituted by F), 1,2,3,4-tetrahydronaphthalene-2,6-diyl, decaline-2,6-diyl

 $B^2$ 

is cyclohexane-1.4-divl (unsubstituted, monosubstituted or disubstituted by F, CH3, CN), cyclohex-1-ene-1,4-diyl (unsubstituted or monosubstituted by F), cyclohex-2-ene-1-alkyl-1-silacyclohexane-1.4-divl. bicyclo[2,2,2]octane-1,4-divl. phenylene-1,4-divl (unsubstituted, 'monosubstituted or disubstituted by CN, CH3, CF3, OCF3, unsubstituted, monosubstituted, disubstituted, trisubstituted or tetrasubstituted by F), phenylene-1,3-diyl (unsubstituted, monosubstituted or disubstituted by CN, CH3, CF3, OCF3, unsubstituted, monosubstituted, disubstituted or trisubstituted by F), thiophene 2,5-diyl, thiophene-2,4-diyl, 1,3-thiazole-1,3-thiazole-2,4-divl. (1,3,4)-thiadiazole-2,5-divl. 2,5-diyl. 1,3-dioxane-2,5-diyl (unsubstituted or monosubstituted by CN). tetrahydrofuran-2,5 diyl, fetrahydropyran-2,5-diyl, 6,6-difluorotetrahydropyran-2.5-diyl. 6.6-difluoro 2.3-dihydro-6H-pyran-2,5-diyl, 6-fluoro-3,4-dihydro-2H-pyran-2,5-diyl, pyrimidine-2,5 diyl (unsubstituted or monosubstituted F), pyridine-2,5-diyl (unsubstituted or monosubstituted F), indane-2.6-divl.

piperidine-1,4-diyl, piperazine-1,4-diyl, pyrimidine-2,5-diyl (unsubstituted or monosubstituted by F)

- X is -(CH<sub>2</sub>)<sub>n-1</sub> where
  - a) one or two -CH2- groups may be replaced by -O- or -C(=O)- and/or
  - one -CH<sub>2</sub>CH<sub>2</sub>- group may be replaced by -CH<sub>2</sub>-CHand one or more H of the -CH<sub>2</sub>- groups may be replaced by F

with the provisos that

- 1) n is 2, 3 or 4
- 2) two adjacent -CH2- groups cannot be replaced by -Q-
- a, b, c are each zero, 1 or 2, with the provisos that
  - a must be 1 when R<sup>1</sup> is hydrogen. F or CN
  - 2) the sum of a+b+c is at least 1
  - the radicals A and M, respectively, in the brackets may be identical or different when the corresponding index is 2, in a liquid crystal layer in the form of a monodomain having an

unambiguously defined direction of the layer normal z of the SmC\* phase,

where the layer normal z and the preferential direction n of the nematic or cholesteric phase (N\* phase) form an angle of more than 5° i

Claim 2 has been cancelled without prejudice.

Claim 3 has been amended as follows:

3 (Amended), A display as claimed in claim 1 [or 2] wherein the liquid-crystal mixture

has a spontaneous polarization of < 200 nC/cm $^2$  and DT (15;1) is > 20.

Claim 4 has been amended as follows.

4 (Amended) A display as claimed in one of claim 1 [to 3], wherein, in (1),

Claim 5 has been amended as follows:

5 (Amended), A display as claimed in one of claims 1 [to 4], wherein, in (1),

B<sup>1</sup> is cyclohexane-1,4-diyl, cyclohex-1-ene-1,4-diyl, phenylene-1,4-diyl, unsubstituted, monosubstituted or disubstituted by F, or thiophene-2,5-diyl.

Claim 6 has been amended as follows:

6 (Amended), A display as claimed in [one of claims] claim 1 [to 5], wherein, in (1),

A<sup>1</sup> is pyrimidine-2,5-diyl (unsubstituted or monosubstituted by F), pyridine-2,5-diyl (unsubstituted or monosubstituted by F), phenylene-1,4-diyl (unsubstituted, monosubstituted or disubstituted by F), or (1,3,4)-thiadiazol-2,5-diyl.

Claim 7 has been amended as follows:

7 (Amended),A display as claimed in claim [one of claims] I [to 6], wherein the liquid-mixture is composed of 3 to 30 compounds and comprises at least one compound of the formula (I) and at least one compound of the formula (II) below and, if desired, at least one compound of the formula (III) below

$$R^{10} \longrightarrow R^{1}$$
(II)

$$R^{10}$$
  $N$   $L$   $R^{12}$ 

where

R<sup>10</sup>, R<sup>11</sup> are as defined for R<sup>1</sup>, R<sup>2</sup>, where additionally the terminal -CH<sub>3</sub>- group may in each case be replaced by one of the chiral groups (optically active or racemic) below:

 $\text{R}^3, \text{R}^4, \text{R}^5, \text{R}^6, \text{R}^7$  are identical or different and are each

- hydroger
- a straight-chain or branched alkyl radical (with or without asymmetric carbon atoms) having 1 to 16 carbon atoms, where
  - b1) one or more nonadjacent and nonterminal CH<sub>2</sub> groups may be replaced by -O- and/or
  - b2) one or two CH<sub>2</sub> groups may be replaced by -CH=CH-,
- c) R<sup>4</sup> and R<sup>5</sup> together may alternatively be -(CH<sub>2</sub>)<sub>4</sub>- or
   -(CH<sub>2</sub>)<sub>5</sub>- if they are attached to an oxirane, dioxolane,
   letrahydrofuran, tetrahydropyran, butyrolactone or
   valerolactone system;

 $\ensuremath{\mathsf{R}}^{12}$  is hydrogen or a straight-chain or branched alkyl radical (with or without asymmetric carbon atoms) having 1 to 16 carbon atoms, where one or more H may be replaced by F and one or two non-adjacent nonterminal -CH<sub>2</sub>- groups may be replaced by -O-

 $z^1, z^2, z^3, z^4, z^5, z^6$  are each, independently of one another, H or F

is a bivalent radical selected from the group consisting of pyridine-2,5-diyl, unsubstituted or monosubstituted by F, pyrimidine-2,5-diyl, unsubstituted or monosubstituted by F, pyrazine-2,5-diyl, unsubstituted or monosubstituted by F.

is a bivalent radical selected from the group consisting of cyclohexane-1,4-diyl, unsubstituted or monosubstituted by CN, CH3, or disubstituted by F, cyclohex-1-enc-1,4-diyl, perfluorocyclohexane-1,4-diyl, cyclohex-2-ene-1,4-diyl, 1-alkyl-1-silacyclohexane-1,4-diyl, bicyclo[2.2.2]octane-1,4-diyl.

Claim 8 has been amended as follows:

8 (Amended), A display as claimed in claim [one of claims] 1 [to 6], wherein the liquid-crystal

modure is composed of 3 to 30 compounds and comprises at least one compound of the formula (I) and at least one compound of the formula (II) and at least one additional compound, selected from the group consisting of (III), (IV), (V), (VI), (VII), where the compounds of the formulae (II) and (III) are as defined in claim 7,

where the symbols and indices are as defined in claim 7,

#### 9 (Amended), A display as claimed in claim [one of claims] 1 [to 8], wherein the liquid-crystal is

composed of 3 to 30 compounds and comprises at least one compound of the formula (I) and at least one compound of the formula (II) and at least one additional compound selected from the group consisting of (VIII), (IX), (X), (XI), (XII), (XIII), (XIV), (XV), (XVI), (XVII), where the compounds of the formulae (II) and (III) are as defined in claim 7,

$$R^{10} = (\sqrt{V}) - \sqrt{N} - (-\sqrt{V}) - \sqrt{N} - (\sqrt{V}) - \sqrt{N} - (\sqrt{V}) - \sqrt{N} - \sqrt{N$$

(VIII)

(IX)
$$R^{10} \underbrace{\begin{array}{c} D^{1} \\ D^{2} \end{array}}_{QX} \underbrace{\begin{array}{c} E \\ \end{array}}_{p} \underbrace{\begin{array}{c} F^{1} \\ F^{2} \end{array}}_{p} \underbrace{\begin{array}{c} E \\ \end{array}}_{q} \underbrace{\begin{array}{c} F^{1} \\ \end{array}}_{q} \underbrace{\begin{array}{c} F^{2} \\ \end{array}}_{q} \underbrace{\begin{array}$$

$$\mathbb{R}^{10} = \mathbb{R}^{10} = \mathbb{R}$$

(XIII) 
$$R^{10} - G^1 - G^2 - R^{11}$$

(XIII) 
$$R^{10} - P^1 - P^2 - P^3 - (-M^1 - E) - P^2 - P^3$$

$$R^{10} = \left( U_1 \right) U^2 \left( U_3 \right) \left( \cdot M^{1} - \left( E \right) \right)_p^{-R}$$

(XV) 
$$R^{10} \leftarrow E \rightarrow (\langle E \rangle)_p \leftarrow K$$

$$R^{10}$$
  $\left( \left\langle \begin{array}{c} T^1 \right\rangle_q \left\langle \begin{array}{c} T^2 \\ \end{array} \right\rangle \left\langle \begin{array}{c} \end{array} \right\rangle_r \left\langle \begin{array}{c} T^1 \\ \end{array} \right\rangle_s R^{11}$ 

(XVI)

$$R^{10}$$
  $T^{1}$   $T^{2}$   $T^{3}$   $R^{11}$ 

(XVII)

where the symbols and indices are as defined in claim 6 or as defined below:

is a bivalent radical selected from the group consisting of naphthalene-2,6-diyl, in which one or two ring carbon atoms may be replaced by N and which can be monosubstituted or disubstituted by F or CN and in which D<sup>1</sup> or D<sup>2</sup> may also be a

is a bivalent radical selected from the group consisting of phenylene-1,4-diyl, unsubstituted, monosubstituted or disubstituted by CN, or unsubstituted, monosubstituted, disubstituted, trisubstituted or tetrasubstituted by F, pyridine-2,5-diyl, unsubstituted or monosubstituted by F, pyrididine-2,5-diyl, unsubstituted or monosubstituted by F, cyclohexane-1,4-diyl

-{F1}-

(saturated) alicycle

is a bivalent radical selected from the group consisting of indane-2,5-diyl, unsubstituted, monosubstituted or disubstituted by F in the aromatic ring, indan-1-one-2,6-diyl, unsubstituted, monosubstituted or disubstituted by F in the aromatic ring, benzothiazole-2,6-diyl, benzothiazole-2,5-diyl, benzothiazole-2,5-diyl, benzothiazole-2,5-diyl, benzothiazole-2,6-diyl, benzothiazole-2,6-diy

is a bivalent radical selected from the group consisting of (1,3,4)-thiadiazole-2,5-diyl, (1,3)-thiazole-2,5-diyl, thiophene-2,5-diyl, (1,3,4)-oxadiazole-2,5-diyl, (1,3)-oxazole-2,5-diyl, isoxazole-2,5-diyl

-(G1)-(G2)-

is a bivalent radical selected from the group consisting of 1,1'-biphenyl-4,4'-diyl, unsubstituted, monosubstituted or disubstituted by CN, or unsubstituted, monosubstituted, disubstituted, trisubstituted or tetrasubstituted by F, 1,1'-phenylcyčlohexyl-4,4'-diyl, 5,5'-pyridylpyrimidine-2,2'-diyl, unsubstituted or monosubstituted by F in one or both of the heterocycles, 5,2'-pyridylpyrimidine-2,5'-diyl, unsubstituted or monosubstituted by F in one or both of the heterocycles, 1,2'-phenyldioxane-4,5'-diyl, 1,2'-(2-fluorophenyl)dioxane-4,5'-diyl, 1,2'-(2-fluorophenyl)dioxane-4,5'-diyl, 1,2'-(2-fluorophenyl)dioxane-4,5'-diyl, 1,2'-(2-fluorophenyl)dioxane-4,5'-diyl, 1,2'-(2-3-diffluorophenyl)dioxane-4,5'-diyl



is a bivalent phenanthrene 2,7-diyl radical in which one or two ring carbon atoms may be replaced by N and which may be monosubstituted, disubstituted, trisubstituted or tetra-substituted by F and in which P<sup>2</sup> and/or P<sup>3</sup> may be a (saturated) alicycle



is a bivalent fluorene-2,7-diyl radical in which the -CH<sub>2</sub>- group in U<sup>2</sup> may be replaced by -C(=O)-, -CHF- or -CF<sub>2</sub>-

is a bivalent radical selected from the group consisting of phenylene-1,3-diyl, unsubstituted, monosubstituted or disubstituted by F, cyclohexane-1,3-diyl, unsubstituted or monosubstituted by F or CN, pyridine-2,6-diyl, pyridine-2,4-diyl, pyridine-3,5-diyl, pyridine-4,6-diyl, pyrimidine-4,6 diyl,

is a bivalent radical selected from the group consisting of phenylene-1,4-diyl, unsubstituted, monosubstituted or disubstituted by CN or F, naphthalene-2,6-diyl, in which one or two ring carbon atoms may be replaced by N and which may be monosubstituted or disubstituted by CN or F, cyclohexane-1,4-diyl, cyclohex-1-ene-1,4-diyl, bicyclo[2.2.2]octane-1,4-diyl, (1,3)-dioxane-2,5-diyl, pyridine-2,5-diyl, unsubstituted or monosubstituted by F, pyrimidine-2,5-diyl, unsubstituted or monosubstituted by F, (1,3,4)-thiadiazole-2,5-diyl, indane-2,5-diyl, unsubstituted, monosubstituted or disubstituted by F in the aromatic ring, thiophene-2,5-diyl,

is a bivalent radical selected from the group consisting of phenylene-1,4-diyl, unsubstituted, monosubstituted or disubstituted by CN or F, naphthalene-2,6-diyl, in which one or two ring carbon atoms may be replaced by N and which may be monosubstituted or disubstituted by CN or F, cyclohexane-1,4-diyl, cyclohex-1-ene-1,4-diyl, bicyclo[2.2.2]octane-1,4-diyl, (1,3)-dioxanc-2,5-diyl, indane-2,5-diyl, unsubstituted, monosubstituted or disubstituted by F in the aromatic ring, thiophene-2,5-diyl

p, q, s are each zero or 1

r is 1 or 2.

Claim 10 has been amended as follows:

10 (Amended), A chiral smeetic liquid-crystal mixture as claimed in claim [one of claims] 1 [to 7], comprising from 10 to 60% of one or more compounds of the formula (f).

Claim 12 has been amended as follows:

12 (Amended), A compound [of the general formula (1) as claimed in claim 1]

selected from [compounds of the formula [XX], where:

$$= H_{jn} \iota_{i} Cn \cdot X \quad \left\langle \begin{array}{c} -N \\ \end{array} \right\rangle \quad \left\langle \begin{array}{c} -N \\ \end{array} \right\rangle \quad \left\langle \begin{array}{c} O \\ \end{array} \right\rangle \quad \left\langle \begin{array}{c} O \\ \end{array} \right\rangle \quad Cm H_{jm} \iota_{i}$$

where n is an integer from 2 to 10

m is an integer from 3 to 10

X is a single bond or O,

with the exception of n=5, m=4, X=single bond

compounds of the formula (XXI), where:

is pyridine-2,5-diyl, 2-fluoropyridine-3,6-diyl, 4-fluoropyrimidine-2,5-diyl or phenylene-1,4-diyl, unsubstituted, monosubstituted or disubstituted by F

is pyridine-2,5-diyl, 2-fluoropyridine-3,6-diyl, 4-fluoropyrimidine-2,5-diyl or phenylene-1,4-diyl, unsubstituted, monosubstituted or disubstituted by F

with the provisos that a) one of the rings  $W^1/W^2$  must be one of the nitrogen-containing heterocycles or

 W<sup>1</sup>-W<sup>2</sup> is undirected and 3-fluorobiphenyl-4,4'-diyl, 2-fluorobiphenyl-4,4'-diyl or 2,3-diffuorobiphenyl-4,4'-diyl

n is an integer from 1 to 14

m is an integer from 1 to 14

X is a single bond or O

compounds of the formula (XXII), where:

$$H_{i,n+i}Cn\cdot X \quad \left\langle \begin{array}{c} -N \\ -N \end{array} \right\rangle \quad CmH_{i,m+i}$$

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n	8	8	8	8	8	8		1 1							1								1 1	13
m	6	7	8	9	10	11	3	4	5	6	7	8	9	10	11	6	11	6	6	4	5	6	7	8
X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

n	13	13	13	14	14	14	14	14	14	7	7	7	7	7	7	7	7	7	8	8	8	8
m	9	10	11	5	6	7	9	10	11	3	4	5	6	7	8	9	10	11	4	7	8	9
X	-	-	-	-	-	-	-	-	-	0	0	0	О	o	0	0	0	0	0	0	0	0

n	8	8	9	9	9	9	9	9	9	9	9	10	10	10	10	10	10	10	11	11	11
m	10	11	11	3	4	6	7	8	9	10	11	3	6	7	8	9	10	11	3	4	6
X	0	0	0	0	ō	О	0	0	0	0	0	0	0	0	0	0	0	О	0	0	0

n	11	11	11	11	11	12	12	12	12	12	12	12	12	13	13	13	13	13	13	13	13	13	14	14
m	7	8	9	10	11	3	4	6	7	8	9	10	11	3	4	5	6	7	8	9	10	11	3	4
X	O	Ö	ō	0	ō	O	ō	Ō	O	0	ō	0	O	O	ō	O	0	O	O	O	0	0	0	0

j)	14	14	14	14	14	14	14
m	5	6	7	8	9	10	11
X	o	О	o	o	o	0	0

compounds of the formula (XXIII), where:

_			_		_							:	10		10	10	10		11		111	11	11	11	11	
п	9	9	9	9	9	9	9	9	9	10	10	10	10			_				_	11	11	**	1,		l
m	3	4	5	6	7	8	9	10	11	3	4	6	7	8	9	10	11	12	5	6	7	8	9	10	11	
x	_	-	-	-	-	-	П	-	-	-	-	-	-	-	,	-	-	-	-		-	,	-	-	-	
Ш	_			Ш	لــا	-	ш		_	_			ـــا	Ц.	ш	L	_	_	ш	_		_				
_					_		_		_			_			-											
n	12	12	12	12	12	12	12	13	13	13	13	13	13	13	13	13	14	14	14	14		_				
m	4	6	7	8	9	10	11	3	4	5	6	7	8	9	10	11	3	4	5	6	7	8				
x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		•	-	-	-				
ш		_			L		L		L	_			L	L		L	L		_		·		ı			
									_							,			_	_			-	-	-	7.7
n	14	14	14	14	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	Ľ	8	8
m	9	10	11	12	3	4	5	6	7	8	9	10	11	12	3	4	5	6	7	8	9	10	11	12	3	4
x	-	-	-	-	0	ō	o	0	ō	0	0	0	0	0	0	o	0	0	0	0	0	o	0	ō	o	0
ш	لــــ	L .	L	I	L	L.,			L	L_	L		Щ.	L.		_	1		_				_			
																_						11.0		1.0		1.0
n	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9		10	10		Ц.			10	11
m	5	7	8	9	10	11	12	3	4	5	6	7	8	9	10	11	12	3	4	5	6	7	8	9	10	11
x	o	0	ō	ō	0	o	o	o	0	0	o	0	0	0	0	o	o	0	0	0	0	0	o	0	0	0
	_	Ĺ	Ľ	Ĺ	L	L	L	L	L	<u>_</u>	L	<u></u>	_	<u></u>	L	_	_	_	L_		_		_			لــا
											_					_	_				,	_	<u>-</u>			Y1
n	11	11	11	11	11	11	П	11	11	11	12	12	12	12	12	12	12	12	12	12	13	13	13	13	13	
m	3	4	5	6	7	8	9	10	11	12	3	4	5	6	7	8	9	10	11	12	3	4	5	6	7	8
x	ö	0	0	0	0	0	0	o	ō	ō	0	0	0	0	0	o	0	0	ō	0	0	0	0	0	o	0
	_	Ľ	_	Ľ	L_	Ľ	1_	Ľ	L.	L_	L		i	<u>_</u>		L.	1	Ĺ	l	1		_			<u> </u>	ш

compounds of the formula (XXIV), where:

- n is an integer from 8 to 14
- m is an integer from 3 to 11
- X is a single bond

with the exception of n=11, m=3 or 5, X is a single bond,

# compounds of the formula (XXV), where:

n is an integer from 2 to 13

m is an integer from 3 to 11

X is O or a single bond

with the exception of n=2, m=11, X=0; n=5, m=5, X=0,

## compounds of the formula (XXVI), where:

n is an integer from 5 to 13

m is an integer from 3 to 10

with the exception of n=8, m=5.

## compounds of the formula (XXVII), where:

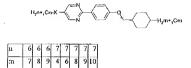
$$H_{J}n+_{J}Cn+X - \bigvee_{i=N}^{F} - \bigvee_{i=N}^{N} - \bigcup_{i=N}^{F} - \bigcup_{i=N}^{F$$

n	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9	10	10	10	10	10	10	10	10
m	3	4	6	7	8	9	10	3	4	5	6	7	8	9	10	11	3	4	5	6	7	8	9	10
x	-	-	-	-	-	-	-	-	-		-	-	-	-	-	,	-	-	-	-	-	-	-	-

n	11	11	11	11	11	11	11	11	12	12	12	12	12	12	12	12	12	13	13	13	13	13	13
m	3	4	5	6	7	8	9	10	3	4	5	6	7	8	9	10	11	3	4	5	6	7	8
X	1-	-	-	-	-	·	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

n	13	13	13	14	14	14	14	14	14	14	14	7	7	7	7	7	7	7	7	7	8	8	8	8
m	9	10	11	3	4	5	6	7	8	9	10	3	4	5	6	7	8	9	10	11	3	4	6	7
X	-	•	-	-	-	-	-	-	F	-	•	0	ō	0	0	0	0	0	0	0	0	ō	ō	ō
						-		_			•				_			-	-	•	-		_	
n	8	8	8	8	9	9	9	9	9	9	9	9	9	10	10	10	10	10	10	10	10	11	11	11
m	8	9	10	11	3	4	5	6	7	8	9	10	11	3	4	5	6	7	8	9	10	3	4	5
X	0	ō	ō	0	o	0	o	0	0	o	o	0	o	0	0	o	ō	0	ō	o	0	0	0	0
	2						_									_	_	_				_		11
n	11	11	11	I 1	11	11	11	12	12	12	12	12	12	12	12	13	13	13	13	13	13	13	13	13
m	6	7	8	9	10	11	12	3	4	5	6	7	8	9	10	3	4	5	6	7	8	9	10	11
x	0	0	ō	ō	0	0	0	ō	0	o	0	0	0	0	o	o	ō	ō	0	0	0	0	o	0

# compounds of the formula (XXIX), where:



n	8	8	9	9	9	9	9	9	9	10	10	10
m	8	10	3	4	6	7	8	9	10	8	9	19
X	-			-	-	-	-	-	-	-	-	-

n	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7
m	3	4	6	7	8	9	10	3	4	5	6	7	8	9	10
х	0	0	0	ō	ō	o	ō	0	Ο.	o	o	o	0	o	0

n	8	8	8	8	8	8	8	8	9	9	9	9	9	9	10	10	10	10	10	10	10
m	3	1							ı	1	1										10
х	0	0	0	0	0	0	0	0	o	o	0	0	0	0	o	0	0	О	o	o	0

compounds of the formula (XXX), where:

$$\begin{array}{c|c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & &$$

n is an integer from 5 to 13 m is an integer from 3 to 10 with the exception of n=8, m=4; n=9, m=3.

Claim 13 has been amended as follows:

13 (Amended),A compound [of the general formula (II) as claimed in claim 7,] selected from compounds of the formula (XXXI), where:

n	10	10	10	10	10	10	10	10	10	10	11	11	11	11	11	11	11	11	11	11	12	12	12	12
m	3	4	5	6	7	8	9	10	11	12	3	4	5	6	7	8	9	10	11	12	3	4	5	6
X		-	-		-	•	-	-	_	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

a	_	12	12	12	12	12	12	13	14	14	14	14	14	14	14	14	14	6	6	6	6	6	6	6	6
n	n	7	8	9	10	11	12	3	4	5	6	7	8	9	10	11	12	3	4	5	6	7	8	9	10
5	(	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	0	0	0	0	0	О	0	0

n	16	6	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	9	9	9
m	11	12	3	4	5	6	7	8	9	10	11	12	3	4	5	6	8	9	10	11	12	3	4	5
x	C	ō	0	0	ō	ō	0	0	ō	o	ō	ō	ō	ō	o	o	0	ō	ō	0	o	ō	0	0

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n	9	9	9	9	9	9	9	10	10	10	10	10	10	10	10	10	10	11	11	u	11	11	11	11
m	6	7	8	9	10	11	12	3	4	5	6	7	8	9	10	11	12	3	4	5	6	7	8	9
X	0	0	0	0	0	0	0	0	0	0	0	0	0	ō	0	0	ō	0	0	0	0	ō	0	Ó
			-	_	_	_	-		_					_			_		_	_	_	_	_	
n	11	11	11	12	12	12	12	12	12	12	12	12	12	13	13	13	13	13	13	13	13	13	13	14
m	10	11	12	3	4	5	6	7	8	9	10	11	12	3	4	5	6	7	8	9	10	11	12	3
х	0	o	0	0	0	o	0	0	0	0	0	0	0	0	o	0	ō	Õ	0	Õ	0	0	o	ō
		_																_						
n	14	14	14	14	14	14	14	14	14															
m	4	5	6	7	8	9	10	11	12															
x	0	ō	0	0	o	0	0	0	0														7	

# compounds of the formula (XXVIII), where:

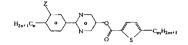
n	11	12	13	14	13	14	12	13	14	13	14	10	11	12	13	14	13	14	9	10	11	12	13	10
m	5	5	5	5	6	6	7	7	7	8	8	9	9	9	9	9	10	10	11	11	11	11	11	12
X	-	-	-	-	-	-	,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

																					,	,		
n	11																							
m	12	12	12	12	4	5	6	7	8	9	10	11	12	4	5	6	7	8	9	10	11	12	4	6
x	-	ŀ	-	-	o	o	ō	o	ō	0	0	o	0	0	0	0	0	0	o	0	o	o	o	o

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n	1		ı	1											ŧ				ŧ	1	1	ı	,	11
m	8		ı					ı				}			1 :				١.	ı	١.	ı	t	7
X	0	0	0	0	0	0	ō	o	0	0	0	o	o	0	0	0	o	0	0	0	0	0	0	0

n					11								
m					12								
х	0	0	ō	ō	0	o	0	0	0	0	0	0	0

compounds of the formula (XXXII), where:



n	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	7	7	7	7	
III.	2	3	4	5	6	7	8	9	2	3	4	5	6	7	8	9	2	3	4	5	

n	7	7	7	7	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	10	10	10	10	10
m	6	7	8	9	2	3	4	5	6	7	8	9	2.	3	4	5	6	7	8	9	2	3	4	5	6

n																						13
m	7	8	9	2	3	4	5	6	7	8	9	2	3	4	5	6	7	8	9	2	3	4

n.	13	13	13	13	13	14	14	14	14	14	14	14	14
m	5	6	7	8	9	2	3	4	5	6	7	8	9

and where Z is H or F in all cases.